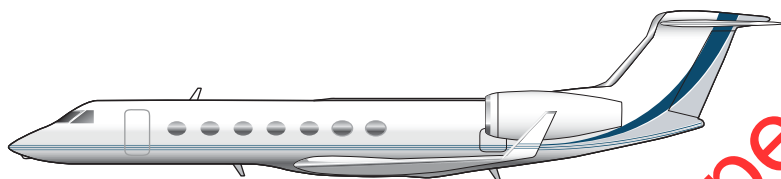


Gulfstream G550



AIRCRAFT SERVICE CHANGE

NUMBER 002D

SUBJECT

INDICATING / RECORDING (ATA 31)

DIGITAL FLIGHT DATA RECORDER SYSTEM
UPGRADE (88 PARAMETERS)

JUNE 19, 2012

"June 19, 2012"

PILOTS INFORMATION SHEET

DIGITAL FLIGHT DATA RECORDER SYSTEM UPGRADE
(88 PARAMETERS)

This service change upgrades the Digital Flight Data Recorder (DFDR) system to meet Federal Aviation Regulation Part 135 Requirements. The DFDR system upgrade will record 88 parameters required for Part 135 operations.

This service change revision updates the language, parts list and drawing callouts to reflect the latest drawing revisions. This revision cancels and supersedes all previous issues of ASC 002 and is now re-issued as ASC 002D.

There will be no cockpit procedural changes required as a result of this installation.

PLEASE DETACH AND GIVE TO FLIGHT DEPARTMENT PERSONNEL

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"June 19, 2012"

PILOTS INFORMATION SHEET
DIGITAL FLIGHT DATA RECORDER SYSTEM UPGRADE
(88 PARAMETERS)

This service change upgrades the Digital Flight Data Recorder (DFDR) system to meet Federal Aviation Regulation Part 135 Requirements. The DFDR system upgrade will record 88 parameters required for Part 135 operations.

This service change revision updates the language, parts list and drawing callouts to reflect the latest drawing revisions. This revision cancels and supersedes all previous issues of ASC 002 and is now re-issued as ASC 002D.

There will be no cockpit procedural changes required as a result of this installation.

PLEASE RETAIN THIS COPY WITH THE ASC BOOKLET

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The design change effected by this document is FAA-approved. If a compliance time, inspection interval or process requires FAA approval; such approval will be noted by the affected words appearing with an asterisk or note designating FAA approval.

The design of this Aircraft Service Change (ASC) is approved by aircraft type design data for installation on aircraft registered for operation in accordance with applicable regulations of the United States Federal Aviation Administration. Individual approval should be obtained from the appropriate airworthiness agency prior to installation on aircraft registered outside the United States.

The design of an ASC is configured to a standard ("greenie") production aircraft. If spare wires, pin connections or locations called out have been used for another modification, the installing agency must ensure the development, documentation and approval of any required deviations.

The following instructions, in step-by-step form, are written as a guide to perform this ASC. Compliance with safe maintenance practices, as defined in the Aircraft Maintenance Manual and FAA regulations is required. It is the responsibility of the installing facility to read all instructions contained in this service change and refer to all associated documents, drawings and manuals for applicable actions.

Gulfstream considers this ASC a means to enhance aircraft capabilities to meet individual operator requirements. The modification is not related to any safety or airworthiness condition.

Subject: Indicating / Recording (ATA 31) – Digital Flight Data Recorder System Upgrade (88 Parameters)

Purpose / Discussion: This service change upgrades the Digital Flight Data Recorder (DFDR) system to meet Federal Aviation Regulation Part 135 requirements. The upgraded DFDR system will record 88 parameters required for Part 135 operations. There will be no cockpit procedural changes required as a result of this installation.

This service change revision updates the language, parts list and drawing callouts to reflect the latest drawing revisions. Changes to the document are marked by a revision bar in the left margin. This revision, ASC 002D cancels and supersedes all previous versions of ASC 002 and is the preferred installation.

Description / Man-Hours
Required Per Aircraft:

This service change modifies the Digital Flight Data Recorder (DFDR) system by adding sensors to accommodate additional parameters to meet FAA requirements. Provisions such as aircraft wiring, sensor brackets and other minor components have been installed on production aircraft serial number 5001 and subsequent to reduce installation man-hours and downtime.

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Description / Man-Hours Required
Per Aircraft continued:

Aircraft that have previously complied with any previous version of ASC 002 meet the intent of this revision and should return the service reply card as "previously complied with" noting the date of original installation.

Approximately 300 man-hours will be required for installation of kit 1 or 2.

Approved Engineering Data:

The source data for this aircraft service change is:

1159ASC57002, Rev. "F" Top Drawing - Digital Flight Data Recorder System, Part 135 Requirements, 88 Parameters (ASC 002)

Prerequisites:

None

Associated Documents:

G550 Aircraft Maintenance Manual (AMM)

G550 Wiring Diagram Manual (WDM)

G550 Structural Repair Manual (SRM)

Flight Manual Revision /
Supplement Required:

None

Publications Data:

Data concerning this service change will be published in a future revision of the affected manual(s). This booklet will provide technical data until the revision(s) is published.

Effectivity:

This service change is applicable to G550 aircraft serial numbers 5001 and subsequent requiring Part 135 certification.

Effect on Spares:

None

Special Equipment /
Tools Required:

ROSE Analysis Unit (17TES0055) - consists of a laptop computer

Software Program Version 3.1 or later (17TES0321)

G550 Part 135 Configuration Database

Interface cable (17TES0044)

If required, contact Gulfstream Customer Support Spare Parts Sales for availability of rental equipment.

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Skill Type Required: Knowledge of the G550 Digital Flight Data Recorder System, aircraft structures and flight controls rigging will be required for this installation.

Price: Prices are subject to change without notice.

Installed Price: Installed price is subject to the prevailing labor rate of the installing facility.

		Kit 1	*Kit 2
Kit Price only:	<u>Domestic:</u>	\$ 182,985.00	\$ 113,571.00
	<u>International:</u>	\$ 186,644.70	\$ 115,842.42

Kit Effectivity:	Kit 1: Aircraft 5001 – 5173, 5181 and 5182 Kit 2: Aircraft 5174 – subsequent excluding 5181 and 5182
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NOTE:	This service change shall be installed only at Gulfstream or at a Gulfstream Authorized Warranty Repair Facility (AWRF).
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NOTE:	All equipment / components removed in conjunction with this installation become the property of Gulfstream Aerospace. Contact Gulfstream Aerospace Material Services Repair Control (MSRCC) at 800-810-4853 or 912-965-4178 to coordinate the return of removed equipment.
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*NOTE FOR KIT 2:	Existing Trim Wheel Assembly and Speed Brake Handle Assembly must be removed from aircraft and returned to Gulfstream for upgrade. Turn time is approximately four weeks to receive items 35 and 36 of Kit 2. Contact Gulfstream Repair Control at 800-810-4853 to coordinate shipment.
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MODIFICATION INSTRUCTIONS:

CAUTION:	PROTECT WIRE BUNDLES, CONNECTORS AND SURROUNDING STRUCTURE DURING ANY MAINTENANCE PROCEDURE FROM SHAVINGS, DEBRIS AND CONTAMINATION. MAINTAIN A PROPERLY CLEANED WORK AREA THROUGHOUT THE PROCEDURE TO ENSURE THE INTEGRITY OF THE AFFECTED COMPONENT / SYSTEM. VISUALLY INSPECT WORK AREA USING ADDITIONAL LIGHT AS NECESSARY TO VERIFY ABSENCE OF ANY DEBRIS PRIOR TO COMPLETION OF PROCEDURE. FAILURE TO COMPLY MAY RESULT IN DAMAGE TO COMPONENTS AND / OR SYSTEMS.
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A. Prepare aircraft for safe maintenance as follows:

1. Remove all electrical power, turn all cockpit switches off and disconnect battery quick disconnects. Refer to G550 AMM, Chapter 20.
2. Refer to the following G550 Aircraft Maintenance Manual (AMM) references for this service change:
 - Standard Maintenance Practices, Chapter 20
 - Doors and Accesses, Chapter 06 - Dimensions and Areas
 - Pilot / Copilot Seat - Removal / Installation, Chapter 25
 - Lateral Control System – Rigging, Chapter 27 - Adjustment / Test
 - Aileron Control – Rigging, Chapter 27 – Inspection / Check
 - Aileron Trim Control Knob - Removal / Installation, Chapter 27
 - Rudder Control System - Rigging, Chapter 27 - Adjustment / Test
 - Rudder Trim Control Knob - Removal / Installation, Chapter 27
 - Elevator Control System Rigging, Chapter 27 - Adjustment / Test
 - Stick Shaker Assembly – Removal / Installation, Chapter 27
 - Elevator Trim/Tab Control Wheel Assembly - Removal / Installation, Chapter 27
 - Speed-Brake Handle Assembly – Removal / Installation, Chapter 27
3. Remove pilot and copilot seats. Refer to Pilot / Copilot Seat - Removal / Installation G550 AMM, Chapter 25.
4. To access modification areas, refer to the installation drawings along with the Dimensions and Areas, G550 AMM, Chapter 06.

B. Modify aircraft using installation drawings listed in the following table in conjunction with procedures outlined in this ASC:

NOTE:	Drawing revisions called out in this table reflect the latest revisions at the time of this ASC release. Revision levels are subject to change pending amendments of the original release. The latest revision for each drawing will be provided when the ASC kit is purchased. In the event a drawing revision or Engineering Order (EO) is issued after the release of this service change, the latest drawing revision or EO will take precedence over the written instructions in this document.
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INSTALLATION DRAWINGS AND REPORTS		
Drawing	Title	Rev. Level
1159ASC57002	Digital FDR System Top Drawing (ASC 002)	F
1159SB51913	Cockpit Primary Cont. Sensor Installation Drawing	E
1159SB53002	Electrical Load Statement	A
1159SB57096	FDAU Installation DFDRS Part 135	--
1159SB59323	Retrofit – Two Place Disconnect Bracket	--
1159SB59325	Force Sensor Installation (Elevator, Aileron, Rudder)	B
1159SB59090	Aileron Trim Tab Position Sensor Installation Drawing	A
1159SB59163	FDR Upgrade to 88 Parameters Wiring Drawing	A
1159SB59097	Cockpit Pedestal Drawing	C
GV-SGER-008	RVDT Rigging Procedure Report	E
GVSP-GER-6074	Functional Verification Procedure Report	K
GVSP-GER-6098	GVSP FDR Correlation Data	J
GV-MS-51	Rigging Procedures for the Gulfstream V & V-SP Flight Control Systems.	U

- C. Perform rigging of flight control systems in accordance with GV-MS-51 – Rigging Procedures for the Gulfstream V & V-SP Flight Control Systems.
- D. Perform calibration and rigging of position sensors per GV-SGER-008 - GV Part 135 FDR - Flight Control System Rotary Variable Displacement Transducer, Rigging Procedure.
- E. Perform functional verification procedure per GVSP-GER-6074 - GVSP Part 135 FDR Functional Verification Procedure.

NOTE:	Upon completion of Functional Verification Procedure (GVSP-GER-6074), a copy of the aircraft FDR Correlation Data (GVSP-GER-6098) is to be given to the operator. Gulfstream Aerospace will maintain this correlation data, which will be available upon request.
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NOTE:	Ensure all systems and components associated with this Aircraft Service Change (ASC) are properly installed and subsequent follow-on procedures are performed in accordance with the G550 Aircraft Maintenance Manual and approved engineering data supplied with this ASC.
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- F. Ensure work area is clean and clear of foreign objects and debris (FOD).
- G. Record compliance with this aircraft service change in the aircraft permanent maintenance records and return aircraft to flight status.
- H. Report compliance with this aircraft service change to Gulfstream CMP via electronic transmittal or fill out and fax the attached service reply card.

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WEIGHT AND BALANCE DATA:	This installation will constitute an appreciable increase as defined by AC 43-13-1B and a recalculation of the aircraft basic weight and balance will be required. It is the responsibility of the installing facility to perform weight and balance computations in accordance with G550 AMM and Gulfstream Aircraft Weight and Balance manual. Changes to the weight and balance shall be documented in the aircraft permanent records.
ELECTRICAL LOAD ANALYSIS DATA:	Reference drawing 1159SB53002 for the effects of this modification on the aircraft electrical system. The information found in the electrical load statement shall become part of the aircraft permanent records.
NOTE:	The following parts list is based on the initial release of this service change. This parts list accurately reflects the latest revised drawings at the time of release of this ASC; however, the parts list is subject to change pending future drawing changes.
NOTE:	Items listed "as required" (A/R) are not included as a part of the kit.
Kit Effectivity:	Kit 1: Aircraft 5001 – 5173, 5181 and 5182 Kit 2: Aircraft 5174 – subsequent excluding 5181 and 5182
*NOTE FOR KIT 2:	Existing Trim Wheel Assembly and Speed Brake Handle Assembly must be removed from aircraft and returned to Gulfstream for upgrade. Turn time is approximately 4 weeks to receive items 35 and 36 of Kit 2. Contact Gulfstream Repair Control at 800-810-4853 or 912-965-4178 to coordinate shipment.

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PARTS REQUIRED PER AIRCRAFT:					
Item	Part Number	Nomenclature/Drawings	Qty.		Comments / Source Document
			-1 kit	-2 kit*	
1.	1159ASC57002	DFDR System Top Dwg (ASC 002)	1	1	**Drawing
2.	1159SB51913	Cockpit Prim Cont. Sen. Inst	1	1	**Drawing - 1159ASC57002
3.	1159SB53002	Electrical Load Statement	1	1	**Drawing - 1159ASC57002
4.	1159SB57096	FDAU Instl DFDRS Part 135	1	1	**Drawing - 1159SB59163
5.	1159SB59090	Aileron T/Tab Sensor	1	1	**Drawing - 1159ASC57002
6.	1159SB59097	Cockpit Pedestal	1	1	**Drawing - 1159ASC57002
7.	1159SB59163	FDR Wiring Diagram	1	1	**Drawing - 1159ASC57002
8.	1159SB59323	2 Place Disconnect Bracket Inst	1	1	**Drawing - 1159ASC57002
9.	1159SB59325	Force Sensor Rod Inst-Elevator, Aileron, Rudder	1	1	**Drawing - 1159ASC57002
10.	GV-SGER-008	RVDT Rigging Procedure	1	1	**Report - 1159ASC57002
11.	GVSP-GER-6074	Functional Verification Procedure	1	1	**Report - 1159ASC57002
12.	GVSP-GER-6098	Correlation Data	1	1	**Report - 1159ASC57002
13.	1159SB51921-3	Link Assy	1	1	1159SB59090
14.	1159AV33022-2	Circuit Breaker	6	6	1159SB59163
15.	1159EL59793-1	Bracket Assy	1	1	1159SB59323
16.	1159F50070-11	Decal	2	2	1159SB59097
17.	1159SB51917-1	Control Column Sensor Bracket Assy	1	1	1159SCF452-5 Included 1159SB51913
18.	1159SB51917-2	RVDT Assy	1	1	1159SCF452-5 Included 1159SB51913
19.	1159SB51918-1	Control Column Sensor Link Assy	2	2	1159SB51913
20.	1159SB51919-5	Rudder Pedals Sensor Link Assy	1	1	1159SB51913
21.	1159SB51924-1	Control Wheel Sensor Bracket Assy	2	2	1159SB51913
22.	1159SB51925-3	Control Wheel Sensor Clamp Assy	2	2	1159SB51913
23.	1159SB51934-11	Clip	1	1	1159SB59090
24.	1159SB51935-1	Bracket Assy	1	1	1159SB59090
25.	1159SB59090-11	Clip	1	1	1159SB59090
26.	1159SB59097-11	Tube	1	1	1159SB59097
27.	1159SB59097-13	Tube	1	1	1159SB59097
28.	1159SB59163-1AWB	Wire Bundle	1	1	1159SB59163

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29.	1159SB59163-800-1	Decal Kit	1	1	1159SB59163
30.	1159SCC473-1	Elevator Force Rod Sensor	2	2	1159SB59325
31.	1159SCC473-7	Aileron Force Rod Sensor	2	2	1159SB59325
32.	1159SCC473-11	Rudder Force Rod Sensor	1	1	1159SB59325
33.	1159SCF452-5	Sensor	4	4	MPC 1159SB59090 / 1159SB51913
34.	3B71200001B	Gustlock	1	-	1159SB59097
35.	3F2043M200A	Speed Brake Handle Assy	1	-	MPC 1159SB59097-1
36.	3F8043M204A	Elevator Trim Wheel Assy	1	-	MPC 1159SB59097-1
37.	4111-0048-1	Speed Brake Handle Assy	-	1	1159SB59097-11
38.	43083-406-7	Elevator Trim Wheel Assy	-	1	1159SB59097-11
39.	528401-13	Aileron/Rudder Trim Control Assy	1	1	Eaton 1159SB59097
40.	AB14-8A	Terminal Lug	9	9	1159SB59163
41.	ABC06N-22P	Connector (plug)	5	5	1159SB59163
42.	C1O-8A	Terminal Lug	4	4	1159SB59163
43.	DE-385	Transformer	2	2	1159SB59163
44.	GA338-4	Washer	1	1	1159SB59090
45.	GA415-3-2	Bus Bar	1	1	1159SB59163
46.	GAB511GC3-2	Bolt	2	2	1159SB59323
47.	GAC835MG20P	Contact	4	4	1159SB59163
48.	GAC835MR16P	Contact	1	1	1159SB59163
49.	GAC835MR20S	Contact	4	4	1159SB59163
50.	GAC835PK20S	Contact	4	4	1159SB59163
51.	GAC835PK22P	Contact	20	20	1159SB59163
52.	GAD12C-3-E7050G	Decal	1	1	1159SB59090
53.	GAD12C-3-INOP	Decal (INOP)	1	1	1159SB59163
54.	GAD12C-4-107A12J1	Decal (Elect-Identification)	A/R	A/R	1159SB59323
55.	GAN510AA3	Collar	2	2	1159SB59323
56.	GAS805BB-37	Splice	8	8	1159SB59163
57.	GAS830AH2	Sleeve	12	12	1159SB59163
58.	GAT11F-BR06-12	Ground Stud	1	1	1159SB59090
59.	GAT805H18-06	Terminal Lug	20	20	1159SB59163
60.	GV-M8-51	GVSP Flight Control Rigging Procedure	1	1	**Drawing 1159ASC57002
61.	MS14144L6	Nut	1	1	1159SB59090
62.	MS14145L4	Nut	1	1	1159SB59090
63.	MS17825-4	Nut	13	13	1159SB59325 / 1159SB51913
64.	MS20470AD3	Rivet	A/R	A/R	1159SB59090
65.	MS20470AD4	Rivets	A/R	A/R	1159SB59097
66.	MS20995C32	Lockwire	A/R	A/R	1159SB51913 / 1159SB59325
67.	MS21042L3	Nut, Self-Locking	13	13	1159SB59090 / 1159SB51913
68.	MS21043-08	Nut, Self-Locking	2	2	1159SB59163
69.	MS21044D08	Nut	2	2	1159SB59163
70.	MS21299-C4	Washer (Flat)	2	2	1159SB59325
71.	MS21919WDE2	Clamp	1	1	1159SB59090
72.	MS21919WDG4	Clamp	4	4	1159SB59163

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73.	MS24665-151	Pin, Cotter	4	4	1159SB59097
74.	MS24665-153	Pin, Cotter	14	14	1159SB59325 / 1159SB59090 / 1159SB51913
75.	MS24665-300	Pin, Cotter	1	1	1159SB59090
76.	MS27039-0808	Screw	2	2	1159SB59163
77.	MS27039-1-06	Screw	2	2	1159SB59163
78.	MS3367-1-9	Ty-wrap	A/R	A/R	1159SB59163
79.	MS35206-246	Screw	2	2	1159SB59163
80.	NAS1149D0316K	Washer	12	12	1159SB51913; AN960KD10LL
81.	NAS1149D0332K	Washer	8	8	1159SB59090 / 1159SB51913 / 1159SB59163; AN960KD10L
82.	NAS1149D0363K	Washer	12	12	1159SB51913; AN960KD10
83.	NAS1149D0416K	Washer	13	13	1159SB59325 / 1159SB51913; AN960KD416L
84.	NAS1149D0432K	Washer	1	1	1159SB59090
85.	NAS1149D0463K	Washer	14	14	1159SB59090 / 1159SB51913; AN960KD416
86.	NAS1149D0663K	Washer	2	2	1159SB59090
87.	NAS1149DN816H	Washer	2	2	1159SB59163; AN960D8LL
88.	NAS1802-3-10	Screw	1	1	1159SB59090
89.	NAS2814C20D	Bolt	2	2	1159SB59325
90.	NAS43HT3-34	Spacer	2	2	1159SB51913
91.	NAS43HT4-35	Spacer	1	1	1159SB51913
92.	NAS6303-21	Bolt, Close Tolerance	2	2	1159SB51913
93.	NAS6303-3H	Bolt	10	10	1159SB51913
94.	NAS6304-22D	Bolt, Close Tolerance	1	1	1159SB59090
95.	NAS6704D14	Bolt	2	2	1159SB59325
96.	NAS6704D15	Bolt	3	3	1159SB59325
97.	NAS6704D16	Bolt	1	1	1159SB59325
98.	NAS6704D17	Bolt	2	2	1159SB59325
99.	NAS6704D18	Bolt	2	2	1159SB59325
100.	NAS6704D21	Bolt	1	1	1159SB59325 / 1159SB51913
101.	NAS74A4-004P	Spacer	2	2	1159SB59090 / 1159SB51913
102.	NAS76A3-004P	Spacer	2	2	1159SB51913
103.	NAS76A4-004P	Spacer	1	1	1159SB51913
104.	S4933959-503	Lock	1	1	1159SB59163

**NOTE:

All drawings and publications will be issued to the latest revision.

*"June 19, 2012"***SERVICE REPLY CARD**

PLEASE FAX THIS PAGE TO GULFSTREAM AEROSPACE CMP
AT 800-944-1775 OR 912-963-0265.

THE FOLLOWING AIRCRAFT SERVICE CHANGE HAS BEEN COMPLIED WITH:

ASC NUMBER	A/C	AIRCRAFT TYPE	COMPLIANCE DATE
970024		G550	

AIRCRAFT HOURS: _____

AIRCRAFT LANDINGS: _____

PREVIOUSLY
COMPLIED WITH (PCW): _____ DATE: _____

NOT APPLICABLE: _____ DATE: _____

NOMENCLATURE		PART NUMBER	SERIAL NUMBER	CMP CODE
	OFF:			
	ON:			
	OFF:			
	ON:			
	OFF:			
	ON:			

SIGNATURE	TITLE / CERTIFICATE NUMBER	COMPANY
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COMMENTS / SUGGESTIONS / ACTIONS TAKEN:

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